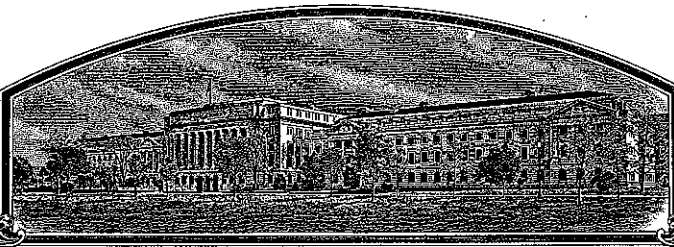


No.



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:
 State of Oregon, by and through the State Board of Higher
 Education on behalf of Oregon State University

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR PROPAGATING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSES, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. IN THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPECIFIED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT, COMMON

'ORCF-102'

In Testimony Whereof, I have hereunto set my hand
 and caused the seal of the Plant Variety
 Protection Office to be affixed at the City of
 Washington, D.C. this twenty-ninth day of
 September, in the year two thousand and six.

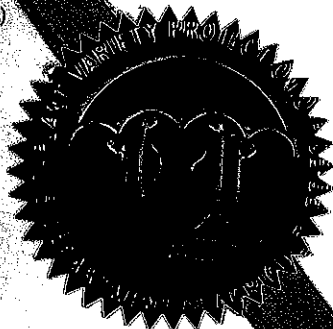
Attest:

[Signature]

Commissioner
 Plant Variety Protection Office
 Agricultural Marketing Service

[Signature]

Secretary of Agriculture



U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE
(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER State of Oregon, by and through the State Board of Higher Education on behalf of Oregon State University		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME OR2010007		3. VARIETY NAME ORCF-102	
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country) c/o Office of Technology Transfer Oregon State University 312 Kerr Administration Bldg. Corvallis, OR 97331-2140		5. TELEPHONE (include area code) (541) 737-0674		<div style="border: 1px solid black; padding: 5px;"> <p align="center">FOR OFFICIAL USE ONLY</p> <p>PVPO NUMBER</p> <p align="center">200500337</p> <p>FILING DATE</p> <p align="center">9-01-2005</p> </div>	
		6. FAX (include area code) (541) 737-3093			
7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) Non-profit public institution of higher education		8. IF INCORPORATED, GIVE STATE OF INCORPORATION OR		9. DATE OF INCORPORATION	
10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. (First person listed will receive all papers) Steven J. Adamson P.O. Box 5997 Portland, OR 97228				<div style="border: 1px solid black; padding: 5px;"> <p>FILING AND EXAMINATION FEES:</p> <p>\$ 3652.00</p> <p>DATE 9-1-2005</p> <p>CERTIFICATION FEE:</p> <p>\$ 768.00</p> <p>DATE 7/28/2006</p> </div>	
11. TELEPHONE (include area code) 503.248.0100		12. FAX (include area code) 503.248.0105		13. E-MAIL sja@ip-rights.com	
14. CROP KIND (Common Name) Wheat		16. FAMILY NAME (Botanical) Graminaceae		18. DOES THE VARIETY CONTAIN ANY TRANSGENES? (OPTIONAL) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF SO, PLEASE GIVE THE ASSIGNED USDA-APHIS REFERENCE NUMBER FOR THE APPROVED PETITION TO DEREGULATE THE GENETICALLY MODIFIED PLANT FOR COMMERCIALIZATION.	
15. GENUS AND SPECIES NAME OF CROP Triticum aestivum		17. IS THE VARIETY A FIRST GENERATION HYBRID? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			
19. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)				20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act) <input checked="" type="checkbox"/> YES (If "yes", answer items 21 and 22 below) <input type="checkbox"/> NO (If "no", go to item 23)	
a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of Variety d. <input checked="" type="checkbox"/> Exhibit D. Additional Description of the Variety (Optional) e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Owner's Ownership f. <input checked="" type="checkbox"/> Voucher Sample (2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository) g. <input checked="" type="checkbox"/> Filing and Examination Fee (\$3,652), made payable to "Treasurer of the United States" (Mail to the Plant Variety Protection Office)				21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, WHICH CLASSES? <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED	
				22. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, SPECIFY THE NUMBER 1,2,3, etc. FOR EACH CLASS. <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED (If additional explanation is necessary, please use the space indicated on the reverse.)	
23. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. (Please use space indicated on reverse.)				24. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT (PLANT BREEDER'S RIGHT OR PATENT)? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. (Please use space indicated on reverse.)	
25. The owners declare that a viable sample of basic seed of the variety has been furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate. The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act. Owner(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.					
SIGNATURE OF OWNER 			SIGNATURE OF OWNER		
NAME (Please print or type) Craig Sheward			NAME (Please print or type)		
CAPACITY OR TITLE Director, Technology Transfer		DATE 7/29/05		CAPACITY OR TITLE Director, Technology	
				DATE	

INSTRUCTIONS

200500337

GENERAL: To be effectively filed with the Plant Variety Protection Office (PVPO), ALL of the following items must be received in the PVPO: (1) Completed application form signed by the owner; (2) completed exhibits A, B, C, E; (3) for a seed reproduced variety at least 2,500 viable untreated seeds, for a hybrid variety at least 2,500 untreated seeds of each line necessary to reproduce the variety, or for tuber reproduced varieties verification that a viable (in the sense that it will reproduce an entire plant) tissue culture will be deposited and maintained in an approved public repository; (4) check drawn on a U.S. bank for \$3,652 (\$432 filing fee and \$3,220 examination fee), payable to "Treasurer of the United States" (See Section 97.6 of the Regulations and Rules of Practice.) Partial applications will be held in the PVPO for not more than 90 days, then returned to the applicant as unfilled. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 401, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. **DO NOT** use masking materials to make corrections. If a certificate is allowed, you will be requested to send a check payable to "Treasurer of the United States" in the amount of \$432 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

Plant Variety Protection Office

Telephone: (301) 504-5518

FAX: (301) 504-5291

Homepage: <http://www.ams.usda.gov/science/pvpo/pvpindex.htm>

To avoid conflict with other variety names in use, the applicant must check the appropriate recognized authority and provide evidence that name has been cleared by the appropriate recognized authority before the Certificate of Protection is issued. For example, for agricultural and vegetable crops, contact: Seed Branch, AMS, USDA, 10301 Baltimore Avenue, Suite 401 NAL Building, Beltsville, MD 20705. Telephone: (301) 504-5682 <http://www.ams.usda.gov/lsg/seed.htm>.

ITEM

- 19a. Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method;
(2) the details of subsequent stages of selection and multiplication;
(3) evidence of uniformity and stability; and
(4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified
- 19b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:
(1) identify these varieties and state all differences objectively;
(2) attach statistical data for characters expressed numerically and demonstrate that these are clear differences; and
(3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.
- 19c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.
- 19d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.
- 19e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.
20. If "Yes" is specified (seed of this variety be sold by variety name only, as a class of certified seed), the applicant **MAY NOT** reverse this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. (See Regulations and Rules of Practice, Section 97.103).
23. See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.
24. See Section 55 of the Act for instructions on claiming the benefit of an earlier filing date.

22. CONTINUED FROM FRONT (Please provide a statement as to the limitation and sequence of generations that may be certified.)

23. CONTINUED FROM FRONT (Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)

Date of first sale as Foundation Seed: September 22, 2004

24. CONTINUED FROM FRONT (Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).)

U.S. Patents 6,211,438; 6,211,439; 6,222,100 and others pending for Clearfield herbicide tolerance technology

NOTES: It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. The fees for filing a change of address; owner's representative; ownership or assignment; or any modification of owner's name is specified in Section 97.175 of the regulations. (See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.)

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 1.4 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, sexual orientation, marital or family status, political beliefs, parental status, or protected genetic information. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call 202-720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

PVP Application for ORCF-102

Exhibit A - Origin and Breeding History

ORCF-102 is a semidwarf soft white winter wheat derived from the three-way cross 'Madsen'/'CV9804'/'Weatherford'. CV-9804, also known as 'FS-4', is the donor of the CLEARFIELD* trait, developed through mutagenesis of the cultivar 'Fidel'. The initial single cross of Madsen/CV9804 was made in spring of 1996, followed by the topcross with Weatherford in 1997; both made at the Hyslop Agronomy Farm. ORCF-102 is an F2 derived line, identified as a single F2 plant in 1999 when it was selected from thin-seeded bulk plot at the Columbia Basin Agricultural Research Center after herbicide application. The selection was made based on plant semi-dwarf stature, spike size and fertility, maturity, and tolerance to imidazolinone herbicide. The selection was given the experimental number OR2010007 in 2000, when it was grown in as a single unreplicated yield trial plot at Hyslop farm.

In 2000, it was evaluated and selected for its grain yield, maturity, stature, phenotypic uniformity, grain quality and test weight, and response to local diseases including Stripe rust (*Puccinia striiformis*) and Septoria leaf blotch.

In 2001, ORCF-102 was evaluated in replicated yield trials at Adams, Moro, and Corvallis, OR. Selection was based on herbicide tolerance and response to Stripe rust, root diseases, grain yield, grain quality, plant height, maturity, and phenotypic uniformity.

In 2002, ORCF-102 was evaluated in OSU breeding trials, Oregon Statewide Variety Trials, and Northern Idaho Variety Trials. These trials were not sprayed with the imidazolinone herbicide. Herbicide tolerance was evaluated in separate replicated trials at two locations in Oregon.

In 2001 and 2002, ORCF-102 was evaluated and selected for end-use quality traits in comparison with major varieties Stephens and Madsen. The evaluations were conducted through the USDA-ARS Western Wheat Quality Laboratory in Pullman, Washington on grain provided from Oregon yield trials. Traits measured include kernel hardness, kernel weight, break flour and total flour yield, flour ash, flour protein, water absorption, cookie diameter, and sponge cake volume.

In fall 2001, approximately 1,500 heads of ORCF-102 were threshed, screened for seed color and seed size, and provided to Washington Foundation Seed for production of pre-Breeder seed. These were planted as individual headrows and off-type rows were removed prior to bulk harvest of pre-Breeder seed.

In fall 2002, a 1-acre block of pre-Breeder seed was seeded for production of Breeder seed. Off-type plants were removed prior to bulk harvest of the Breeder seed.

Evidence of Uniformity and stability

ORCF-102 has been observed to be uniform and stable over 41 site x years of variety trials. In 2001 through 2004, uniformity and stability were evaluated in replicated yield trials throughout the Pacific Northwest. ORCF-102 was evaluated in Oregon breeding trials from 2001 through 2004, in the 2002 and 2003 USDA-ARS Western Regional Uniform Soft White Nurseries, and in the 2004 variety trials conducted by the McGregor Company in Washington.

ORCF-102 may contain up to 5 red kernels per pound in Breeders, Foundation, Registered, or Certified classes of seed multiplication. ORCF-102 also may contain up to a total of 1 in 10,000 combined of the naturally occurring variants: plants that are 8 to 15 cm taller or plants with bronze (red or tan) chaff spikes. These variants described are distinct within the variety and are stable and predictable with a degree of reliability comparable to other varieties of the same kind, and within recognized tolerances, when the variety is reproduced or reconstructed, and was originally part of the variety when released.

To further determine variants in kernel color, a phenol staining reaction was determined. It was observed that 17% of the kernels stained are ivory, 75% are fawn, and 8% are light brown. No brown or brown-black staining kernels were observed.

Exhibit B - Statement of Distinctness

ORCF-102 is most similar to the commercial varieties Weatherford, Madsen, and ORCF-101. All are of the soft white market class, winter type, semi-dwarf, awned and have similar levels of winterhardiness. Weatherford and Madsen are parents of ORCF102.

ORCF-101 and ORCF-102 carry a form of the acetohydroxyacid synthetase (AHAS) gene which has been altered through chemical mutagenesis. The altered gene is not affected by Beyond™, an imidazolinone-based herbicide, when treated at labeled application rates.. Varieties such as Weatherford and Madsen, which do not carry the AHAS gene, are killed or severely damaged if treated with the imidazonlinone herbicide at the same rates.

ORCF-102 differs from ORCF-101 in that ORCF-102 carries the Pch-1 gene on the VPM-1 chromosome segment from *Aegilops ventricosa* that provides for resistance to Strawbreaker footrot (*Pseudocercospora herpotrichoides*). ORCF-101 does not carry the VPM-1, chromosome segment. ORCF-102 also differs from ORCF-101 based on plant height.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 2.5 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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**U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MD 20705**

Exhibit C

**OBJECTIVE DESCRIPTION OF VARIETY
Wheat (*Triticum* spp.)**

NAME OF APPLICANT (S) State of Oregon; Oregon State Univ.	TEMPORARY OR EXPERIMENTAL DESIGNATION OR2010007	VARIETY NAME ORCF-102
ADDRESS (Street and No. or RD No., City, State, Zip Code and Country) c/o Office of Technology Transfer Oregon State University, 312 Kerr Administration Bldg. Corvallis, OR 97331-2140		FOR OFFICIAL USE ONLY PVPO NUMBER 200500337

PLEASE READ ALL INSTRUCTIONS CAREFULLY:

Place the appropriate number that describes the varietal character of this variety in the boxes below. Place a zero in the first box (e.g., or) when number is either 99 or less or 9 or less respectively. Data for quantitative plant characters should be based on a minimum of 100 plants. Comparative data should be determined from varieties entered in the same trial. Royal Horticultural Society or any recognized color standard may be used to determine plant colors; designate system used: _____ . Please answer all questions for your variety; lack of response may delay progress of your application.

1. KIND:

- 1 = Common
2 = Durum
3 = Club
4 = Other (Specify) _____

2. VERNALIZATION:

- 1 = Spring
2 = Winter
3 = Other (Specify) _____

3. COLEOPTILE ANTHOCYANIN:

- 1 = Absent 2 = Present

4. JUVENILE PLANT GROWTH:

- 1 = Prostrate 2 = Semi-erect 3 = Erect

5. PLANT COLOR: (boot stage)

- 1 = Yellow-Green
2 = Green
3 = Blue-Green

6. FLAG LEAF: (boot stage)

- 1 = Erect 2 = Recurved

- 1 = Not Twisted 2 = Twisted

- 1 = Wax Absent 2 = Wax Present

7. EAR EMERGENCE:

Number of Days (Average)

Number of Days Earlier Than *

Same As *

Number of Days Later Than *

* Stephens

*Relative to a PVPO-Approved Commercial Variety Grown in the Same Trial

8. ANTHOR COLOR:

- 1 = Yellow 2 = Purple

9. PLANT HEIGHT: (from soil to top of head, excluding awns)

0 9 2

cm (Average)

0 3

cm Taller Than Stephens *

Same As *

cm Shorter Than *

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10. STEM:**A. ANTHOCYANIN**

1

1 = Absent 2 = Present

B. WAXY BLOOM

1

1 = Absent 2 = Present

C. HAIRINESS (last internode of rachis)

1

1 = Absent 2 = Present

D. INTERNODE

1

1 = Hollow 2 = Semi-solid 3 = Solid

4

Number of Nodes

E. PEDUNCLE

3

1 = Erect 2 = Recurved 3 = Semi-erect

3 0

cm Length

F. AURICLE

1

Anthocyanin: 1 = Absent 2 = Present

1

Hair: 1 = Absent 2 = Present

11. HEAD: (At Maturity)**A. DENSITY**

2

1 = Lax
2 = Middense (Laxidense)
3 = Dense**B. SHAPE**

1

1 = Tapering
2 = Strap
3 = Clavate
4 = Other (Specify) _____**C. CURVATURE**

2

1 = Erect
2 = Inclined
3 = Recurved**D. AWNEDNESS**

4

1 = Awnless
2 = Apically Awnletted
3 = Awnletted
4 = Awned**12. GLUMES: (At Maturity)****A. COLOR**

1

1 = White
2 = Tan
3 = Other (Specify) _____**B. SHOULDER**

2

1 = Wanting 2 = Oblique
3 = Rounded 4 = Square
5 = Elevated 6 = Apiculate
7 = Other (Specify) _____**C. SHOULDER WIDTH**

1

1 = Narrow
2 = Medium
3 = Wide**D. BEAK**

3

1 = Obtuse
2 = Acute
3 = Acuminate**E. BEAK WIDTH**

2

1 = Narrow
2 = Medium
3 = Wide**F. GLUME LENGTH**

2

1 = Short (ca. 7mm)
2 = Medium (ca. 8mm)
3 = Long (ca. 9mm)**G. WIDTH**

2

1 = Narrow (ca. 3mm)
2 = Medium (ca. 3.5mm)
3 = Long (ca. 4mm)

7

13. SEED:

A. SHAPE

- ☐ 2 1 = Ovate
2 = Oval
3 = Elliptical

B. CHEEK

- ☐ 1 1 = Rounded
2 = Angular

C. BRUSH

- ☐ 2 1 = Short 1 = Not Collared
2 = Medium 2 = Collared
3 = Long

D. CREASE

- ☐ 1 1 = Width 60% or less of Kernel
2 = Width 80% or less of Kernel
3 = Width Nearly as Wide as Kernel

- ☐ 2 1 = Depth 20% or less of Kernel
2 = Depth 35% or less of Kernel
3 = Depth 50% or less of Kernel

E. COLOR

- ☐ 1 1 = White
2 = Amber
3 = Red
4 = Other (Specify) _____

F. TEXTURE

- ☐ 2 1 = Hard
2 = Soft
3 = Other (Specify) _____

G. PHENOL REACTION (See Instructions)

- ☐ ** 1 = Ivory 4 = Dark Brown
2 = Fawn 5 = Black
3 = Light Brown

H. SEED WEIGHT

- ☐ 4 ☐ 1 g/1000 Seed (Whole number only)

I. GERM SIZE

- ☐ 3 1 = Small
2 = Midsize
3 = Large

200500337

14. DISEASE: PLEASE INDICATE THE SPECIFIC RACE OR STRAIN TESTED

(0 = Not Tested 1 = Susceptible 2 = Resistant 3 = Intermediate 4 = Tolerant)

- | | |
|---|---|
| <input type="checkbox"/> 0 Stem Rust (<i>Puccinia graminis</i> f. sp. <i>tritici</i>) | <input type="checkbox"/> 0 Leaf Rust (<i>Puccinia recondita</i> f. sp. <i>tritici</i>) |
| <input type="checkbox"/> 1 Stripe Rust (<i>Puccinia striiformis</i>) | <input type="checkbox"/> 0 Loose Smut (<i>Ustilago tritici</i>) |
| <input type="checkbox"/> 0 Tan Spot (<i>Pyrenophora tritici-repentis</i>) | <input type="checkbox"/> 0 Flag Smut (<i>Urocystis agropyri</i>) |
| <input type="checkbox"/> 0 Halo Spot (<i>Selenophoma donacis</i>) | <input type="checkbox"/> 0 Common Bunt (<i>Tilletia tritici</i> or <i>T. laevis</i>) |
| <input type="checkbox"/> 0 <i>Septoria nodorum</i> (Glume Blotch) | <input type="checkbox"/> 0 Dwarf Bunt (<i>Tilletia controversa</i>) |
| <input type="checkbox"/> 0 <i>Septoria avenae</i> (Speckled Leaf Disease) | <input type="checkbox"/> 0 Karnal Bunt (<i>Tilletia indica</i>) |
| <input type="checkbox"/> 1 <i>Septoria tritici</i> (Speckled Leaf Blotch) | <input type="checkbox"/> 0 Powdery Mildew (<i>Erysiphe graminis</i> f. sp. <i>tritici</i>) |
| <input type="checkbox"/> 0 Scab (<i>Fusarium</i> spp.) | <input type="checkbox"/> 0 "Snow Molds" |
| <input type="checkbox"/> 0 "Black Point" (Kernel Smudge) | <input type="checkbox"/> 3 Common Root Rot (<i>Fusarium</i> , <i>Cochliobolus</i> and <i>Bipolaris</i> spp.) |
| <input type="checkbox"/> 0 Barley Yellow Dwarf Virus (BYDV) | <input type="checkbox"/> 0 Rhizoctonia Root Rot (<i>Rhizoctonia solani</i>) |
| <input type="checkbox"/> 0 Soilborne Mosaic Virus (SBMV) | <input type="checkbox"/> 0 Black Chaff (<i>Xanthomonas campestris</i> pv. <i>translucens</i>). |
| <input type="checkbox"/> 0 Wheat Yellow (Spindle Streak) Mosaic Virus | <input type="checkbox"/> 0 Bacterial Leaf Blight (<i>Pseudomonas syringae</i> pv. <i>syringae</i>) |
| <input type="checkbox"/> 0 Wheat Streak Mosaic Virus (WSMV) | <input type="checkbox"/> 2 Other (Specify) <u>Strawbreaker footrot</u> |
| <input type="checkbox"/> Other (Specify) _____ | <input type="checkbox"/> 3 Other (Specify) <u>Cephalosporium stripe</u> |
| <input type="checkbox"/> Other (Specify) _____ | <input type="checkbox"/> Other (Specify) _____ |
| <input type="checkbox"/> Other (Specify) _____ | <input type="checkbox"/> Other (Specify) _____ |

15. INSECT: (0 = Not Tested 1 = Susceptible 2 = Resistant 3 = Intermediate 4 = Tolerant)

PLEASE SPECIFY BIOTYPE (where needed)

- | | |
|--|--|
| <input type="checkbox"/> 0 Hessian Fly (<i>Mayetiola destructor</i>) | <input type="checkbox"/> Other (Specify) _____ |
| <input type="checkbox"/> 0 Stem Sawfly (<i>Cephus</i> spp.) | <input type="checkbox"/> Other (Specify) _____ |
| <input type="checkbox"/> 0 Cereal Leaf Beetle (<i>Oulema melanopa</i>) | <input type="checkbox"/> Other (Specify) _____ |

15. INSECT: (continued) 0 = Not Tested 1 = Susceptible 2 = Resistant 3 = Intermediate 4 = Tolerant

PLEASE SPECIFY BIOTYPE (Where Needed)

- ☐ Russian Aphid (*Diuraphis noxia*)
- ☐ Greenbug (*Schizaphis graminum*)
- ☐ Aphids

- ☐ Other (Specify) _____
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____

200500337

16. ADDITIONAL INFORMATION ON ANY ITEM ABOVE, OR GENERAL COMMENTS:

** Phenol reaction: 17% Ivory; 75% Fawn; 8% Light Brown.

Stripe rust reaction has been rated as resistant to moderately resistant to field races prior to 2005. In 2005, ORCF-102 was found to be susceptible to stripe rust race #115 at the Hyslop Agronomy Farm near Corvallis, OR.

Exhibit D. Additional Description of the Variety

ORCF-102 possesses Clearfield™ herbicide resistance technology through a form of the acetohydroxyacid synthetase gene that has been altered through chemical mutagenesis. The altered gene is not affected by Beyond™, an imidazolinone-based herbicide, at labeled application rates. Clearfield™ wheat technologies are owned by BASF Corporation and protected under U.S. Patent law (U.S. Patents 6,211,438; 6,211,439; 6,222,100, and others pending). The Clearfield™ herbicide resistance technology is licensed to Oregon State University through contractual agreement with the BASF Corporation.

Herbicide tolerance of eight CLEARFIELD* varieties, including ORCF-102, were evaluated in 2002, 2003, and 2004 at Pendleton and Moro, Oregon. Beyond™ was applied at two different growth stages using 4, 6, or 12 oz rates in conjunction with a 0.25% non-ionic surfactant and 1% Solution 32 (v/v). Plots of the check variety Stephens were effectively killed with each herbicide application. In two of the six field trials, all CLEARFIELD* varieties showed significant visual crop response to Beyond herbicide. The response appeared to be related to post-treatment environment conditions and crop health, in addition to application rates. Visual response symptoms did not necessarily translate into reduced grain yields, however. The CLEARFIELD* varieties in this study, including ORCF-102, ORCF-101, Idaho 587, and CV-9804, responded similarly to varying rates and application dates for Beyond herbicide. As indicated by non-significant treatment by variety interactions, there was no evidence of a genetic background effect on expression of the CLEARFIELD* trait among these varieties with regard to grain yield. The trials show that ORCF-102 had commercially acceptable crop safety ratings and similar tolerance to CV-9804 based on fall and spring applications of Beyond™ at 4, 8, or 16 oz rates.

Table 6. Means from paired t test comparisons of end use quality traits for soft white varieties and selections. USDA-ARS WWQL.

		Test weight	Kernel wt.	Grain protein	Hardness	Break flour	Flour yield	Flour ash
	N	lb/bu	gm	%	SKCS	yield	%	%
OR2010007	12	60.85 *	40.89	11.49	41.52 *	45.4	64.76	0.39
Stephens		58.78	39.78	11.48	34.77	44.14	64.14	0.4
OR2010007	8	60.25	38.53 *	11.66	41.35	45.66 *	63.69	0.39
Madsen		59.36	33.16	11.65	43.39	47.24	64.46	0.35
OR2010007	8	60.25 *	38.53	11.66 *	41.35	45.66	63.39	0.39
Tubbs		58.78	37.88	10.76	42.28	44.86	63.38	0.39
OR2010007	11	60.74 *	40.05 *	11.5	40.8	45.4	64.76	0.38
ORCF-101		59.41	37.67	11.71	38.95	44.15	64.44	0.39

Table 6. Concluded.

		Milling score	Flour protein	Starch	Absorption	Cookie	Sponge cake
	N		%	Viscosity	%	Diameter	vol.
				RVA		cm	cc
OR2010007	12	79.39	9.74	122 *	55.83	9.04	1235
Stephens		78.29	9.92	140	55.47	9.12	1224
OR2010007	8	77.7	10	124	56.05 *	9.03	1254
Madsen		80.76	10.29	128	57.25	8.96	1239
OR2010007	8	77.7	10 *	124	56.05	9.03	1259
Tubbs		76.74	9.26	126	55.3	8.96	1254
OR2010007	11	79.39 *	9.75 *	121 *	56.12	9.07	1236
ORCF-101		78.28	10.29	138	56.16	9.1	1213

* Significant difference in paired mean values at P<0.05 based on t-test.

ASSESSMENT OF THE QUALITY OF

OR2010007

SOFT WHITE WINTER WHEAT

C. F. Morris & D. A. Engle
 USDA-ARS Western Wheat Quality Lab
 February 2004

Following is an assessment of the quality of OR2010007. Assessment of wheat quality involves data interpretation and therefore may vary accordingly. Data are from the Western Wheat Quality Lab (WWQL) Annual Crop Reports and represent standard cultivar development and nursery testing procedures.

Nurseries and the corresponding WWQL Annual Report nursery number are described in Table 1a. Due to environmental effects, experimental genotypes are evaluated by comparison to check varieties grown in the same nursery (same location-year) to minimize environmental effects. For statistical purposes a limited number of check varieties are used. These are generally selected on the basis of class, current production, occurrence in nurseries, and known quality attributes. Statistical analyses are conducted as essentially paired t-tests using balanced designs. N (the number of paired comparisons) varies according to the test conducted. Tables 1b present the analysis of variance by check variety for each quality parameter. LSDs assume an $\alpha = 0.05$. Data used for analysis is available on request.

Table 1a. Nursery Sources For OR2010007 Data Set

YEAR	NURSCO	NURNAME	LOCATION	BREDNAME
00	95	IMI SOFT QUALITY		C.J. PETERSON
01	13	IMIRAN QUALITY	PENDLETON	C.J. PETERSON
01	185	IMI ADVANCED QUALITY	PENDLETON	C.J. PETERSON
02	1078	VARIETY RELEASE QUALITY	CORVALLIS	C.J. PETERSON
02	2078	VARIETY RELEASE QUALITY	MORO	C.J. PETERSON
03	1011	PNW WHEAT QUALITY COUNCIL	PENDLETON	C.F. MORRIS
03	1137	G&E OREGON SOFT WINTER	ARLINGTON	C.F. MORRIS
03	2137	G&E OREGON SOFT WINTER	CONDON	C.F. MORRIS
03	3137	G&E OREGON SOFT WINTER	CORVALLIS	C.F. MORRIS
03	4137	G&E OREGON SOFT WINTER	HERMISTON	C.F. MORRIS
03	5137	G&E OREGON SOFT WINTER	PENDLETON	C.F. MORRIS
03	6137	G&E OREGON SOFT WINTER	KASEBERG	C.F. MORRIS

INTERPRETIVE SUMMARY FOR OR2010007

As compared to Stephens, Madsen, Tubbs, ORCF101:

Test weight is greater than Stephens, Tubbs and ORCF101; similar to Madsen.

Grain protein is greater than Tubbs (0.9%); similar to all other checks.

Kernel weight is greater than Madsen and ORCF101; similar to Stephens and Tubbs.

Milling performance is greater than ORCF101; similar to all other checks.

Flour protein is less than ORCF101; similar to Madsen and Stephens; greater than Tubbs.

Flour pasting (RVA, FSV) indicates normal amylose content starch.

Dough water absorption is less than Madsen; similar to all other checks.

Cookie baking performance is similar to all checks.

Cake baking performance is similar to all checks.

Overall, OR2010007 has good grain properties generally equal or better than checks. Milling quality similar to all checks with end-use quality similar to all checks. Release of OR2010007 should be justified on non-quality considerations.

OR2010007 will exert no positive or negative effect on the overall quality of the wheat crop in Oregon

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). The information is held confidential until the certificate is issued (7 U.S.C. 2426).

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

1. NAME OF APPLICANT(S) State of Oregon, by and through the State Board of Higher Education on behalf of Oregon State University	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER OR20100007	3. VARIETY NAME ORCF-102
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country) c/o Office of Technology Transfer Oregon State University 312 Kerr Administration Bldg Corvallis, OR 97331-2140	5. TELEPHONE (Include area code) (541) 737-0674	6. FAX (Include area code) (541) 737-3093
7. PVPO NUMBER		200500337

8. Does the applicant own all rights to the variety? Mark an "X" in the appropriate block. If no, please explain. ☒ YES ☐ NO

9. Is the applicant (individual or company) a U.S. national or a U.S. based company? If no, give name of country. ☒ YES ☐ NO

10. Is the applicant the original owner? ☒ YES ☐ NO If no, please answer one of the following:

a. If the original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. National(s)?

☒ YES ☐ NO If no, give name of country

b. If the original rights to variety were owned by a company(ies), is (are) the original owner(s) a U.S. based company?

☐ YES ☐ NO If no, give name of country

11. Additional explanation on ownership (Trace ownership from original breeder to current owner. Use the reverse for extra space if needed):

Dr. C. James Peterson, the original breeder of the subject variety, is an employee of Oregon State University and by agreement between Oregon State University and C. James Peterson, all inventions, including new plant varieties, developed by C. James Peterson belong to Oregon State University.

ORCF-102 possesses Clearfiled herbicide tolerance technology owned by BASF Corporation under patents 6,211,438; 6,211,439; and 6,222,100 and others pending. The technology is licensed to Oregon State University through contractual agreement and ownership rights of the variety reside with Oregon State University.

PLEASE NOTE:

Plant variety protection can only be afforded to the owners (not licensees) who meet the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed the final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definitions.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 0.1 hour per response, including the time for reviewing the instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, sexual orientation, marital or family status, political beliefs, parental status, or protected genetic information. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, D.C. 20250-9410 or call (202) 720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.